

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Yin et al.

Serial No.: 09/293,188

Filed: April 16, 1999

For: METHOD OF FORMING
INTERCONNECT STRUCTURE WITH
INTERLAYER DIELECTRIC (as amended)

Confirmation No.: 4546

Examiner: P. Cao

Group Art Unit: 2814

Attorney Docket No.: 2269-6910.1US
(97-1121.01/US)

Notice of Allowance Mailed:

May 24, 2007

VIA ELECTRONIC FILING

AUGUST 10, 2007

COMMENTS ON STATEMENT OF REASONS FOR ALLOWANCE

Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

This communication is filed in response to the Office Action mailed October 20, 2006, the Office Action mailed April 16, 2007, and the Notice of Allowance mailed May 24, 2007, and sets forth Applicants' comments, pursuant to 37 C.F.R. §1.104(e), on the Examiner's Statements of Allowable Subject Matter.

In the Office Action mailed October 20, 2006, the Examiner indicates:

The prior art of record fails to disclose the combination of the steps comprising: reacting the upper surface of the conductive material to the nitrogen-containing composition, and forming the second dielectric layer occurring simultaneously.

In the Office Action mailed April 16, 2007, the Examiner indicates:

The prior art of record neither anticipates nor renders obvious all the limitations recited in the claims above, including the limitation of having a nitrogen composition as the composition of the chemical compound for reacting with the surface of the electrically conductive material.

In the Notice of Allowance mailed May 24, 2007, the Examiner indicates:

[T]he prior art of record neither anticipates nor renders obvious all the limitations recited in the amended base claims. Specifically, the combination of a method of reducing oxidation of a conductive material comprising the steps of reacting a nitrogen containing composition with an upper surface of the conductive material to form a chemical compound more resistant to oxidation than the conductive material and forming a second dielectric layer over the conductive material and the first dielectric layer and adhering the second dielectric layer to the conductive material, wherein reacting the chemical composition and forming the second dielectric layer occur simultaneously, as recited in the base claims 31, 34, 51, and 52. Or the combination of a method of reducing oxidation of a conductive material comprising the steps of reacting a nitrogen-containing composition with an upper surface of an unoxidized electrically conductive material to form a passivation layer and adhering a dielectric layer to the electrically conductive material such that the passivation layer (or chemical compound layer) is substantially absorbed by the dielectric layer, as recited in the base claims 40 and 45.

Applicants concur with the reasons as stated by the Examiner insofar as they comprise a summary, which is exemplary and not limiting. However, the scope of the claims is based on the actual language of the claims and equivalents thereof, and not on a paraphrase or summary of the claim language.

The Independent claims as allowed recite features and methodology different from and in addition to, and in different language than, those described in the Statement of Allowable Subject Matter. Furthermore, the dependent claims recite elements in addition to those of the independent claims, which are also not reflected in the Statement of Allowable Subject Matter. Such additional elements, in combination with those of the independent claims from which each claim

depends, provide additional reasons for patentability. Accordingly, the scope of the claims must be determined from the literal language of each as a whole, as well as all equivalents thereof.

Therefore, to the extent that the Examiner's reasons for allowance as stated are not relevant to, or wholly encompassing of, a particular claim, independent or dependent, Applicants assume that (pursuant to 37 C.F.R. §1.104(e)) the Examiner has determined that the record of the prosecution as a whole of the application makes clear the reasons for allowing those claims. Further, it appears, pursuant to M.P.E.P. 1302.14, that the Examiner's Statements of Allowable Subject Matter are not intended to encompass all of the reasons for allowance.

Respectfully submitted,



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Date: August 10, 2007

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